Evaluate the expression. *(p. 330)*

1. $3^5 \cdot 3^{-1}$ **81**

2. $(2^4)^2$ **256**

3. $\left(\dfrac{2}{3^{-2}}\right)^2$ **324**

4. $\left(\dfrac{3}{5}\right)^{-2}$ $\dfrac{25}{9}$
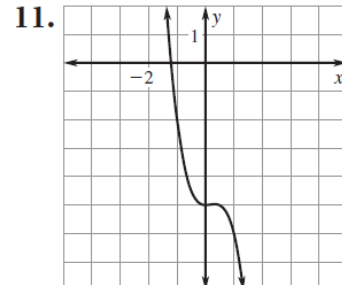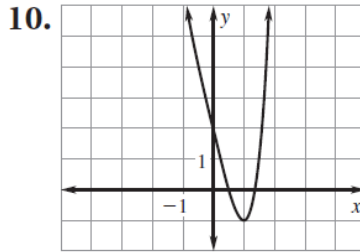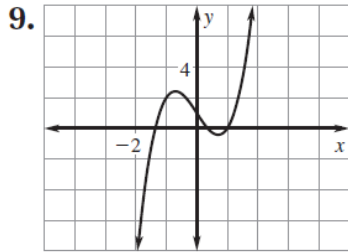
Simplify the expression. *(p. 330)*

5. $(x^4 y^{-2})(x^{-3} y^8)$ xy^6

6. $(a^2 b^{-5})^{-3}$ $\dfrac{b^{15}}{a^6}$

7. $\dfrac{x^3 y^7}{x^{-4} y^0}$ $x^7 y^7$

8. $\dfrac{c^3 d^{-2}}{c^5 d^{-1}}$ $\dfrac{1}{c^2 d}$

Graph the polynomial function. *(p. 337)* **9–11. See margin.**

9.

10.

11.

Perform the indicated operation. *(p. 346)*

12. $(x^3 + x^2 - 6) - (2x^2 + 4x - 8)$
$x^3 - x^2 - 4x + 2$

13. $(-3x^2 + 4x - 10) + (x^2 - 9x + 15)$
$-2x^2 - 5x + 5$

14. $(x - 5)(x^2 - 5x + 7)$
$x^3 - 10x^2 + 32x - 35$

15. $(x + 3)(x - 6)(3x - 1)$
$3x^3 - 10x^2 - 51x + 18$

5.1 **Write the answer in scientific notation.**

1. $(3.4 \times 10^3)(2.8 \times 10^8)$
9.52×10^{11}

2. $(5.8 \times 10^{-6})^4$
$1.1316496 \times 10^{-21}$

3. $\dfrac{4.6 \times 10^{-7}}{9.2 \times 10^{-9}}$ 5×10^1

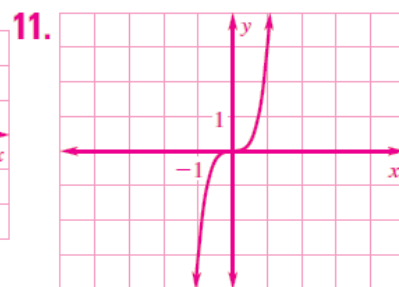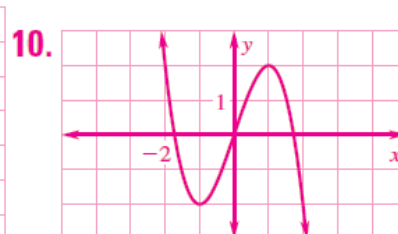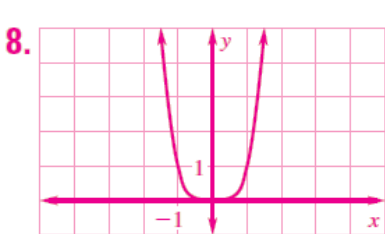**5.1** **Simplify the expression. Tell which properties of exponents you used.** **4–7. See margin.**

4. $\dfrac{-2y^2}{5x^4}$

5. $\dfrac{b^6}{64 a^{15}}$

6. $\dfrac{2s^8}{r^4}$

7. $7x^2 y^2$

5.2 **Graph the polynomial function.** **8–11. See margin.**

8.

9.

10.

11.

5.3 **Perform the indicated operation.**

12. $(4z^3 + 9) + (3z^2 - 4z - 2)$
$4z^3 + 3z^2 - 4z + 7$

13. $(x^2 + 3x - 1) - (4x^2 + 7)$
$-3x^2 + 3x - 8$

14. $(3x - 4)^3$
$27x^3 - 108x^2 + 144x - 64$